

REMARKS

Claims 1, 5, 18, and 25-27 were rejected. Claims 28 and 29 are cancelled. Claims 1, 18 and 25-27 have been amended. Certain amendments to claim 18 merely adjust grammar. None of the amended or new claims introduce new subject matter. Amended claims 1 and 18 are supported throughout the specification, for example at Fig. 10 and page 17, lines 6-14, and for claim 1 at Fig. 2 and page 11, lines 21-32. Amended claim 25 is supported at page 17, lines 6-14, and page 12, line 28 through page 13, line 10. Amended claim 26 is supported at page 16, lines 10-24. Amended claim 27 is supported at page 10, lines 11-21. Claims 1, 5, 18, and 25-27 are currently pending in the application.

On page 5 of the Office Action, next to the last paragraph, the Examiner stated that Figure 3 had been elected. This is not the case. In the election dated July 16, 2002, Applicant elected species (i), in Figure 2. On page 2 of that election document, Applicant had identified additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim, and mistakenly identified among this list “(species F (Figure 10) and subspecies vi (Figure 8)).” Thereafter, Applicant sent a Supplemental Response on July 17, 2002, correcting the erroneous subspecies from subspecies vi (Figure 8) to subspecies ii (Figure 3). However, this correction did not specify a change in the original election.

35 USC 112

Claims 1, 5, 18, and 25 were rejected under 35 USC 112, second paragraph as being indefinite. The Examiner objected to the term “immediately adjacent” in claims 1 and 18 and to certain misdescription in claim 25. Amendments to the independent claims moot the rejection.

35 USC 102 AND 35 USC 103

Claims 1 and 5 were rejected under 35 USC 102(b) as anticipated by, or, in the alternative, under 35 USC 103(a) as obvious over Deuse (US 4,236,576). Applicant traverses the rejections.

Deuse does not disclose a heat exchanger having a vent pipe wherein at least part of one end of the vent pipe is made from an upper tube sheet and is fixed to the boundary between the upper tube sheet and the shell of the heat exchanger, as illustrated, for example in Figure 2 of the present application. The Deuse communicating conduit 23, which the Examiner likens to the claimed venting pipe, pierces through the top member 11 but cannot be described as fixed to the boundary of the upper tube sheet and the shell. Furthermore, as to obviousness, Deuse does not teach or suggest such a placement for the communicating conduit 23. Therefore Deuse does not anticipate nor does it render obvious claims 1 and 5. Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Claims 18 and 25-27 were rejected under 35 USC 103(a) as unpatentable over the combined teachings of Kieren (US 808,385) and Deuse (US 4,236,576). Applicant traverses the rejection.

Neither Kieren nor Deuse teach the vent pipe that has at least part of one end of the vent pipe made of the upper tube sheet and fixed to the boundary between the upper tube sheet and the shell. Since the combined teachings do not teach or suggest every limitation of the instant claims, the claims are patentable over the prior art references.

Further, the combination of teachings of Deuse with the apparatus of Kieren, as proposed by the Examiner, would be inoperable and would serve no efficient purpose. The Examiner proposed modifying the upper partition 12 of Kieren to contain the port and associated passages as taught by Deuse. The teachings of Deuse allow these passages so that the cooling shell-side fluid can flow over the outside of the tubes near the top of the device, to cool those tubes, which are filled with a hot substance which exits from the top of the device. However, although Deuse is focused on cooling a substance that has a very high temperature at the outlet (Deuse, col. 1, lines 4-9, col. 2, lines 11-35), Kieren, on the other hand, is focused on heating, not cooling, the water that it is being transported through the apparatus to a boiler (Kieren, col. 1, lines 10-14). Thus, introducing into the Kieren apparatus, conduits for passing cooling liquid through the device would be counter productive. Furthermore, the hot liquid of the Kieren device exits from tube 28 at port 29, which is below the partition 12. Contrary to the Examiner's rationale, having

passageways like the Deuse passageways 21-23 passing through the Kieren partition 12 would serve no efficient purpose in the Kieren apparatus because the hot liquid exits before reaching the partition. The only thing happening at partition 12 in the Kieren apparatus is that water enters tubes 26 and travels down tubes 26 toward the bottom of the apparatus.

Since the combined teachings do not teach every element of the claims and since the combination would be inoperable and lacks a rational motivation to combine, the claims are patentable over the proposed combination of references. Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Claims 18 and 25-27 were rejected under 35 USC 103(a) as unpatentable over the combined teachings of Deuse (US 4,236,576) and Brucher (US 5,035,283). Applicant traverses the rejection.

In order to make a prima facie showing of obviousness, the Examiner's grounds for the rejection must include a showing of a teaching, suggestion or motivation to combine the references. The Examiner has provided no showing whatsoever of a teaching, suggestion or motivation to combine the references. On this basis alone, the rejection fails for failure to meet the legal requirements.

Furthermore, the combination of references fails to teach the vent pipe that has at least part of one end of the vent pipe made of the upper tube sheet and fixed to the boundary between the upper tube sheet and the shell. Since the combined teachings do not teach or suggest every limitation of the instant claims, the claims are patentable over the prior art references. For the above reasons, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Claim 25 was rejected under 35 USC 103(a) as unpatentable over any of the combined teachings as discussed previously, and further in view of McNeal (US 2,181,704). Applicant traverses the rejection.

In order to make a prima facie showing of obviousness, the Examiner's grounds for the rejection must include a showing of a teaching, suggestion or motivation to combine the references. The Examiner has provided no showing whatsoever of a teaching, suggestion or

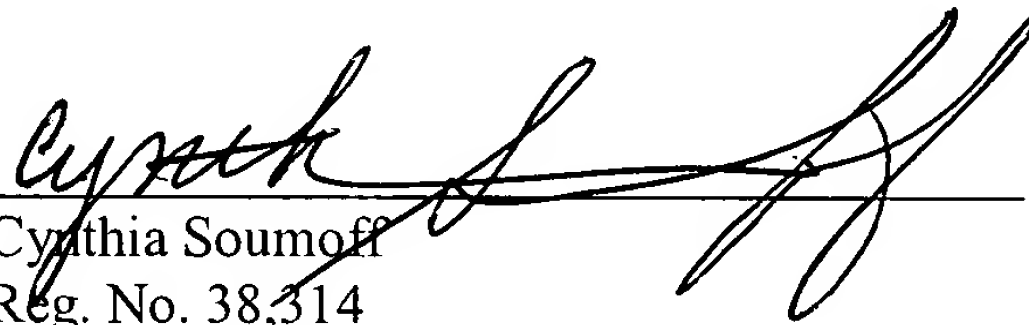
motivation to combine the references. On this basis alone, the rejection fails for failure to meet the legal requirements.

Furthermore, the combination of references fails to teach the vent pipe that has at least part of one end of the vent pipe made of the upper tube sheet and fixed to the boundary between the upper tube sheet and the shell. Since the combined teachings do not teach or suggest every limitation of the instant claims, the claims are patentable over the prior art references. For the above reasons, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

In view of the foregoing, Applicants submit that all pending claims are in condition for allowance and request that all claims be allowed. The Examiner is invited to contact the undersigned should he believe that this would expedite prosecution of this application. It is believed that no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

Dated: March 28, 2007


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